

Paulo Costa

Software Engineer

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Campinas - SP - Brazil

1 Professional Experience

- **SlashID** - Since 01/2023
Development of Identity Provider and Authorization Proxy in Go
- **Pass2Go** - 12/2021 to 01/2023
Development of Python + GraphQL backend for Pass2Go, a tool to speed up access to condos and office buildings with QR Codes
- **CrowdStrike / Iperlane** - 10/2016 to 10/2021
Development of software container for Android apps, capable of installing, monitoring and executing 3rd party apps isolated from the system and without extra permissions.
The project was developed mostly in Java, with parts in C++, Kotlin and Python.
I also worked on several modules and tools of interest, including:
 - **ADB Proxy**: Uses SSH tunnels to attach the local computer to a remote Android device. Useful for remote control and debugging.
 - **Jacoco Multiprocess**: Allows collecting coverage data on multiprocess Android apps
 - **Android-Full-Framework** - Gradle plugin for Android projects that expose every method/field from every Android Framework version as public at compile-time and then modifies the bytecode with the necessary boilerplate to access it. Very handy for hacking Android's internals.
 - **HiddenAPI** - Unlocks access to Android's non-SDK interfaces

I was initially hired by Iperlane, which was acquired by CrowdStrike in 10/2017.
- **Geofusion** - 04/2015 to 10/2016
Development of the Java backend and Web frontend of Onmaps, a tool for analysis and visualization of geospatial data, used mostly as marketing tool (Geomarketing).
The project uses a Java backend, Web frontend, Oracle database and spatial indexes in Solr.
- **Facebook** - 10/2012 to 09/2014
I've worked on the project responsible for managing all of Facebook's servers and other datacenter devices, and which acts as an intermediary between several automation tools, such as: Provisioning, application deployment, repairs, financial systems, data replication, monitoring, etc.
This project is written in Java and communicates with other applications through Thrift APIs. I also contributed with several client applications, usually written in Python, PHP or C++.
- **Veridis Tecnologia** - 09/2009 to 10/2012
Veridis develops solutions for biometric access control (Fingerprints in special). I was responsible for developing the library for capture and matching Fingerprints (Based on NBIS) and the firmware for a embedded system that controls biometric doors and turnstiles.
Most Development was done in C++, but all libraries have APIs and samples in Java and C#.
- **Griaule Biometrics** - 05/2006 to 09/2009
Griaule sells a software library for capture and matching of fingerprints. I was responsible with supporting several fingerprint scanners, Linux support, modularization and other improvements.
Most development was done in C++, but there are bindings and examples for Java, Delphi, C# and VB.
- **CPqD - Research and Development Center in Telecommunications**, Intern - 12/2005 to 02/2006
As an intern, my job consisted in fixing known bugs, writing JUnit tests and add new features to existing components.
All components are written in Java and typically used Hibernate, EJB e Struts.

2 Education

- **Specialization in Automation and Control of Industrial and Agro-Industrial Processes** - Feagri/Unicamp - 03/2019 to 03/2020
(Unfinished due to COVID lockdown)
- **Specialization in Complex Data Mining** - IC/Unicamp - 03/2018 to 08/2018.
- **Computer Engineering** - IC/Unicamp - 03/2006 to 12/2010.
Study Certificates:
 - Visual Computing
 - Project of Dedicated Hardware Systems
 - Software Engineering
 - Project of Information Systems
- **Technician in Eletronics** - Cotuca/Unicamp - 02/2007 to 12/2010
- **Technician in Informatics** - Cotuca/Unicamp - 02/2003 to 12/2006
Emphasis in Support Systems

3 Languages

- **Portuguese** - Native Speaker.
- **English** - Advanced Level.
109/120 points on TOEFL iBT (11/2008).

4 Some personal Projects

- **u2fdev** FIDO authenticator running on microcontrollers, Android and linux.
- **MongoFS** and **SpotifyFS**- FUSE filesystems to manage documents in Mongo databases as JSON files and play Spotify songs as MP3 files.
- **aionettools** Network-related tools written in asyncio Python. Currently supports ping for measuring latency/loss and NDT7 for measuring download/upload speed.
- **Contour Curves for Highcharts** - Plugin to the popular Highcharts library to plot 2-D and 3-D contour curves.
- **Experimental Design** - Web interface to easily plan and analyze experiments using DOE methodologies.
- **charlcd-gpio e ttyWiegand** - Linux kernel modules for driving HD44780-compatible character LCDs and to receive data from Wiegand deviced through GPIO pins.
- **JIPS** - Toy Java VM implemented in ArchC. Partial support for JNI, no Garbage collection, no threads.
- **Space Wars** - StarWars-like 3-D space battle game writen with Java + OpenGL + OpenAL.
- **Mini-MIPS** - A MIPS-like multi-cycle microprocessor, developed all the way from behavioral VHDL to physical layout. Used GHDL, Cadence Encounter and Cadence Virtuoso.
- **Rabiscomatic** - Plotter assembled from old printers and a ARM microcontroller.
- **Calculatrix** - Plots math functions in in 2 or 3 dimensions. Developed with Java and OpenGL.
- **3D Wohoo** - Libraries for drawing 2-D and 3-D computer graphics, built from the scratch in Pascal/Delphi and Java.